Teaching technical and behavioural competences in project management

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Structured Abstract

Managing projects is a complex issue and it implies leveraging on different competences (Dainty et al., 2005). "Good" Project Management is achieved by leveraging properly on both technical and behavioural competences (Hodgson et al., 2011; Tabassi et al., 2012). However, frequently training programs tend to consider these as separated competences. "PM based" training programs address only technical competences focusing only on organizational issues but not on people management. Moreover, PMs tend to go through some basic and generic training programs on behavioural skills. However, there is a missing link between the two groups of competences.

We argue that addressing simultaneously and coherently both kinds of competences may pay off.

This research is related to a massive training program conducted by an Italian Multinational Group that involved during 2008, 2009, 2010 and 2011 more than 700 Project Managers. Based on data collected during the development of this program, we aim at testing whether teaching both technical and behavioural competences simultaneously and jointly can improve the training experience and effectiveness

To do so we compare two training courses: "Full" course focused only on technical competences; "Systemic" course focused on both technical and behavioural competences.
For a general list of competences included in the course please refer to table 1.
Data was collected for 19 editions of the Systemic course including 454 participants and 13 editions of the Full one, including 263 participants. Table 2 – highlights key figures of the two courses.

Technical competences	Behavioural competences
• Integration Management	• Leadership
• Scope Management	• Communication Management
• Time Management	• Team Management
• Cost Management	• Conflict Management
• Quality Management	• Negotiation
• HR Management	• Systemic Thinking
• Risk Management	• Problem Solving
• Procurement Management	• Decision Making

Table 1 – list of competences included in the courses

	"Full"	"Systemic"
Total Duration	5 days: 44 h	5 days: 54 h
H. technical competences	38 h (86%)	22 h (41%)
H. behavioural competences	0 h	12 h (22%)
H. "blended"	0 h	14 h (26%)
Other activites	6 h (14%)	6 h (11%)
Simulations	12 h	15 h
Residential course	Yes	Yes

Table 2 – key characteristics of the two considered courses

For each edition we were able to evaluate:

- The initial competences of participants, by means of a multiple choice test covering all different knowledge areas, focused only on technical competences, and fulfilled before the course start (a Knowledge Based Test – KBT)

- The gained competences of participants acquired during the course, by means of a multiple choice test covering all different knowledge areas, focused only on technical competences, and fulfilled at the end of the course start (a Learning Verification Test – LVT).

- The participants' satisfaction of the course assessed by a questionnaire to assess the general appreciation of the course.

Table 3 summarises key statistics about the two courses.

		Full	Systemic
KBT	Average	0.60	0.60
LVT	Average	0.86	0.85
Evaluation		4.86*	5.15*

Table 3 – key results of the statistical analysis (difference with sig < 0.001)*

Analyses were conducted by means of ANOVA and Multiple Regression Analysis.
Attendees are mainly operating as Project Managers, have an average age of 40 years old with an average experience in PM role equal to 6 years. The vast majority have a "technical" background coming from engineering areas. Groups attending the two courses are similar in terms of initial competences thus allowing to compare the results in terms of learning.

The analysis provide clear evidence that teaching jointly technical and behavioural skills is extremely powerful. In particular, technical competences appear improved after both courses and the extend of improvement is not statistically different between the two courses.
However, the satisfaction in the Systemic course (i.e. thus including both behavioural and technical competences) is significantly higher compared to the Full course. Moreover, the detailed analysis of the

different factors that contribute to the general satisfaction of the two courses shows that these differ among the two learning experiences.

This result suggests to companies willing to improve effectively the PM competences of their executives, to address also behavioural competences and foster the interconnection between technical and behavioural capabilities.

These results, show that the two courses are both effective in increasing technical competences, but that reducing focus on technical competences in favour of behavioural ones is not harming the learning results. In addition, participants satisfaction is significantly higher when behavioural and technical competences are blended.

The paper is not free from limitations. In particular, the identified relationship may partially depend on the organizational contexts in which learners operate. We think that this issue can be under control since the 700 managers belong to different business units of the same industrial group, thus suggesting that some commonalities are there.

Second, even if we controlled regression results by considering some exogenous factor, still participants' specific factors have not been considered, since the satisfaction analysis was anonymous thus limiting the traceability of respondents.

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